# Attachment: Syllabus

## 1 Name of the teaching module

Conflict Management – Understanding and managing conflicts about energy technologies.

## 2. Brief description of the subject matter

Public controversies and conflicts about innovative technologies are part of technology development. Like other technologies, energy technologies in many European countries are frequently confronted with society's increasing unease about science and technology development. Controversies about innovation often occur at the local and regional level when technologies that are developed in the context of their application, e.g. when it comes to selecting locations for large-scale energy infrastructure such as nuclear power plants, geothermal facilities or high-voltage power grids. In such situations, engineers and scientists are often not familiar with the concepts and strategies that can be used to understand and deal with the controversy.
The Conflict Management module introduces social science perspectives on conflicts. The module does not provide comprehensive conflict management training. Instead it delivers insights into how to understand technological controversies. Students learn that there are a variety of definitions, theoretical approaches and models available that can help them understand conflicts about technologies. The module introduces key questions about the functions, impact, dynamics, and potential outcomes of conflicts. Examples from the field of energy technology (e.g. nuclear energy and geothermal energy) are provided to illustrate the social science approaches.
In addition to knowledge about concepts and processes, a role-play is used to provide students with an emotional understanding of conflict situations related to energy technology issues.

## 3. Complete SSH problems description

- Technological controversies about energy technologies and infrastructure occur frequently and are caused by conflicting interests, value systems, or risk perceptions.
- A basic understanding of how technological controversies develop, their dynamics and their (social) implications is useful for people involved in the selection of locations for technology projects.
- An awareness of the different perspectives and perceptions that come into play is important for understanding the development

of conflicts in general and controversies about technologies.

- Awareness forms the basis for an open-minded understanding that complex technological controversies are characterized by different perspectives, interests and values.

## 4. Prerequisites and contextual knowledge

There are no prerequisites, although students are expected to be interested in this topic. The module is mainly aimed at Masters and PhD students, but Bachelor students are also able to attend.

## 5. Learning outcomes

### *A) KNOWLEDGE*

The students will learn about the extent to which a social science perspective is useful for understanding conflicts related to energy infrastructure and technologies. They will acquire basic knowledge about social science perspectives on technological controversies and learn which questions and dimensions are relevant in social science conflict analysis. This enables the students to gain a broader understanding of the key aspects of technological conflicts, to identify emerging conflicts and to undertake measures to deal with them (prevent or resolve).

### *B) SKILLS*

Students will develop an awareness for the positions and interests of different actors in complex technological controversies related to energy issues. As a result, they will learn how to take an open-minded approach towards these different perspectives, interests and values.

### *C) SOCIAL COMPETENCIES*

The students gain social competencies such as the ability to collaborate effectively, develop and defend the point of view of a peer group, put forward arguments within a debate, and acknowledge positions that differ from one's own point of view.

## 6. Module structure

The module will consist of three sessions (see point 8) that are 1-1.5 hours each. These sessions can be taught consecutively in one day

or over a period of three days. If the module is taught in one day, there must be breaks between the sessions and a longer break between the second and third sessions.
A traditional lecture format will be used to introduce the issue of technological controversies and the conceptual ideas from SSH.
Interactive elements will complement the traditional lecture format. The second session involves a role-play that allows students to experience different points of view and emotions within a conflict situation related to energy technologies and infrastructure.
There are no homework tasks.

## 7. Teaching methods

- Lectures
- Interactive role-play
- Discussions
- Group works

## 8. Class plans

### Session 1. Why and how do we talk about technological controversies? (video input, group work, lecture supported by PowerPoint slides)

*Time: 1 hour*

- 10 minutes video input
- 10 minutes exploration task
- 40 minutes lecture

*Description of the task*

- Lesson to introduce the issue of technological controversies and related SSH perspectives:
    - *What is a technological controversy?*

- *How do technological controversies arise?*
- *What are reasons for the emergence of technological controversies (types of conflicts)?*
- *What are the implications of technological controversies?*
- *Why should we deal with technological controversies in the context of energy issues?*

*Materials required*

- (Additional material for a general introduction of the module: TM7-S1-RM-00-ppt_Module overview)
- TM7-S1-RM-01-video
- TM7-S1-RM-02-ppt_lecture_technological controversies

*Teacher-student and student-student interaction*

- Group work
- Traditional lecture

## Session 2. Role-play panel discussion about a geothermal energy facility (lecture, group work, role-play, discussion)

*Time: 1.5 hours*

- 10 minutes introduction
- 30 minutes preparation of the roles
- 35 minutes role-play
- 15 minutes brief reflection and summary

*Description of the task*

- Students are asked to carry out a role-playing game. The storyline of the game is a panel discussion that brings together parties who have different positions about a planned geothermal energy project. The students play the roles of local citizens, the mayor and representatives of the local council, and the project developer/investor. A detailed description about how to organize the game is available here: TM7-S2-RM-02-description_of_the_case

*Materials required*

- TM7-S2-RM-01-method_of_roleplaying
- TM7-S2-RM-02-description_of_the_case
- TM7-S2-RM-03-ppt_illustration_of_the_case_description
- TM7-S2-RM-04-Role_of_the_moderator
- TM7-S2-RM-05-Role_Cards
- TM7-S2-RM-06-Handout group work_preparation_role_play

*Teacher-student and student-student interaction*

- The teacher prepares the game and guides the students
- The students prepare their roles and play the role-play game

## Session 3. Key questions for understanding conflicts and an introduction to conflict management approaches: group work and exercise combined with a lecture

*Time: 1.5 hours*

- 10 minutes content-related reflection about the role-play (joint discussion between the students and the teacher)
- 25 minutes deriving key questions about a conflict (students guided by the teacher)
- 20 minutes applying the key questions to another case study
- 15 minutes lecture (introduction to conflict management approaches)
- 10 minutes intervention and discussion about conflict management approaches
- 10 minutes summary (of the whole module)

*Description of the task*

- The role-play is used as a point of departure to systematize and deepen some of the aspects concerning technological controversies. After that an introduction into conflict management approaches will be given in the form of a lecture. Another

case study is introduced with the help of a newspaper article or with the help of a student and the students then apply their new knowledge to this new case study.

*Materials required*

- TM7-S2-RM-03-ppt_illustration_of_the_case_description
- TM7-S3-RM-01-Key questions conflict
- TM7-S3-RM-02-Vaughan_2017_newspaper_article_fracking_Wales
- TM7-S3-RM-03-ppt_lecture_conflict management
- TM7-S3-RM-04-ppt_last slide

*Teacher-student and student-student interaction*

- Group work
- Student-student and student-teacher discussions
- Traditional lecture format

## 9. Literature

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**Further reading:**

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